

Traffic Data Analysis

Little Lake

Eastbound and Westbound



Town of Midland

Engineering Department

August 4th, 2021

1.0	Introduction	3
1.1	Location.....	3
1.2	Traffic Trailer	3
2.0	Speed Summary.....	3
2.1	Eastbound Speed Analysis	4
2.2	Westbound Speed Analysis	7
3.0	Traffic Volume	10
3.1	Eastbound Volume by Hour.....	11
3.2	Westbound Volume by Hour	12
4.0	Conclusion	14
	Figure 1- Traffic Trailer	3
	Figure 2- Little Lake Eastbound	4
	Figure 3- Speed by Hour Analysis for Eastbound Weekdays	5
	Figure 4 Speed by Hour Analysis for Eastbound Weekends	6
	Figure 5- Little Lake Westbound.....	7
	Figure 6- Speed by Hour Analysis for Westbound (August 5 th to August 6 th and August 9 th to August 10 th , 2021)	8
	Figure 7- Speed by Hour Analysis for Westbound (August 7 th to August 8 th , 2021)	9
	Figure 8- Total Volume per Day (Eastbound)	11
	Figure 9- Total Volume per Day (Westbound).....	11
	Figure 10 Average Volume per Hour from July 29 th to July 30 th and August 1 st to August 2 nd (Eastbound)	12
	Figure 11- Average Volume by Hour from July 31 st to August 1 st (Eastbound).....	12
	Figure 12- Average Volume by Hour from August 5 th to August 6 th and August 9 th to August 10 th , 2021 (Westbound)	13
	Figure 13- Average Volume by Hour from August 8 th to August 9 th (Westbound)	13
	Table 1- Locations of Traffic Trailer	3
	Table 2- Speed Summary.....	4
	Table 3- Volume Summary	10

1.0 Introduction

A traffic count was conducted from July 28th, 2021, to August 4th, 2021, on Little Lake Park for both eastbound and westbound directions. Vehicle speeds and traffic volume were collected by a traffic trailer (model ATS-3). The purpose is to see if there are any speeding issues, raise safety awareness, and help calm traffic by displaying speeds of vehicles approaching.

1.1 Location

The traffic trailer was placed on Little Lake Park for both eastbound and westbound directions. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1- Locations of Traffic Trailer

Direction	Location	Period
Eastbound	848 Little Lake Park, Midland, ON	4:00am on July 28 th , 2021– 3:00am on August 4 th , 2021
Westbound	916 Little Lake Park, Midland, ON	10:00am August 4 th , 2021 – 1:20pm on August 11 th , 2021

1.2 Traffic Trailer

The traffic trailer used was model ATS-3 as shown in Figure 1. The traffic trailer is set to show the speed of the approaching vehicle and display short messages depending on the speed. The data is collected and grouped into one-hour intervals.



Figure 1- Traffic Trailer

2.0 Speed Summary

The posted speed limit on Little Lake Park is 20km/h; however, generally it is accepted that vehicles that are travelling up to 10km/h above the posted speed limit are not considered to be speeding. Table 2 shows an overall speed summary of the data collected for eastbound and westbound directions.

Table 2- Speed Summary

Direction	Average Speed (km/h)	85 th Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed (km/h)
Eastbound	24.64	30.14	10	67.0
Westbound	26.23	31.3	10	51.0

2.1 Eastbound Speed Analysis

Figure 2 to 4 below show the speed summary for the eastbound traffic.

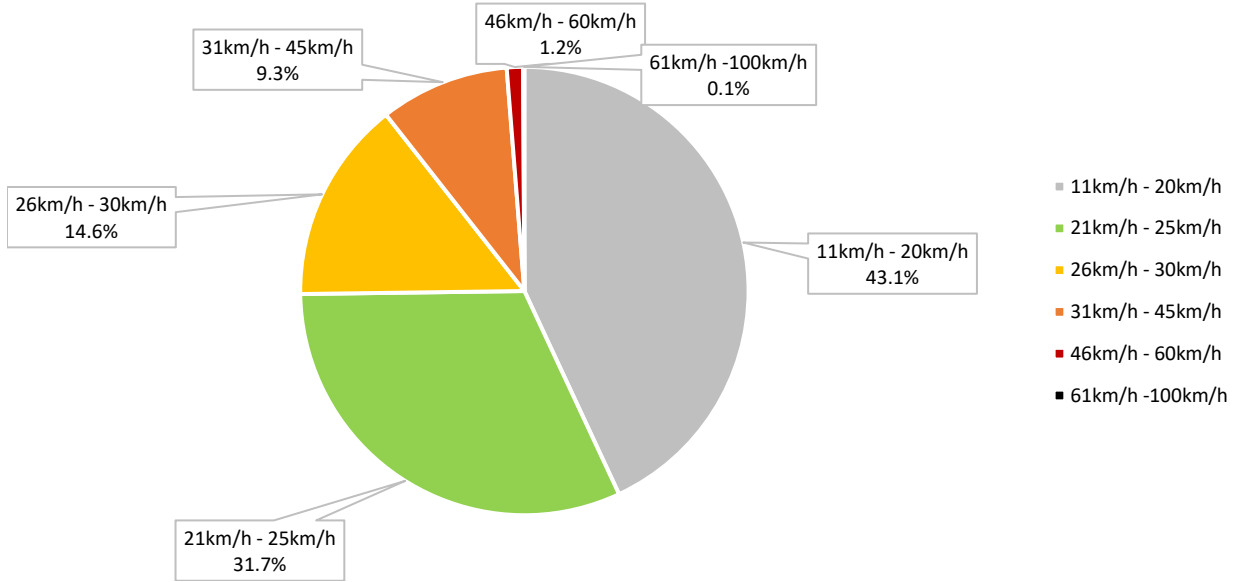


Figure 2- Little Lake Eastbound

Figure 2 above shows that 43.1% of vehicles were travelling below the posted speed limit, 46.3% of vehicles were travelling between 21-30 km/h, and 10.6% of vehicles were travelling above 30km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 89.4% of vehicles were travelling within the accepted speed limit in the eastbound direction.

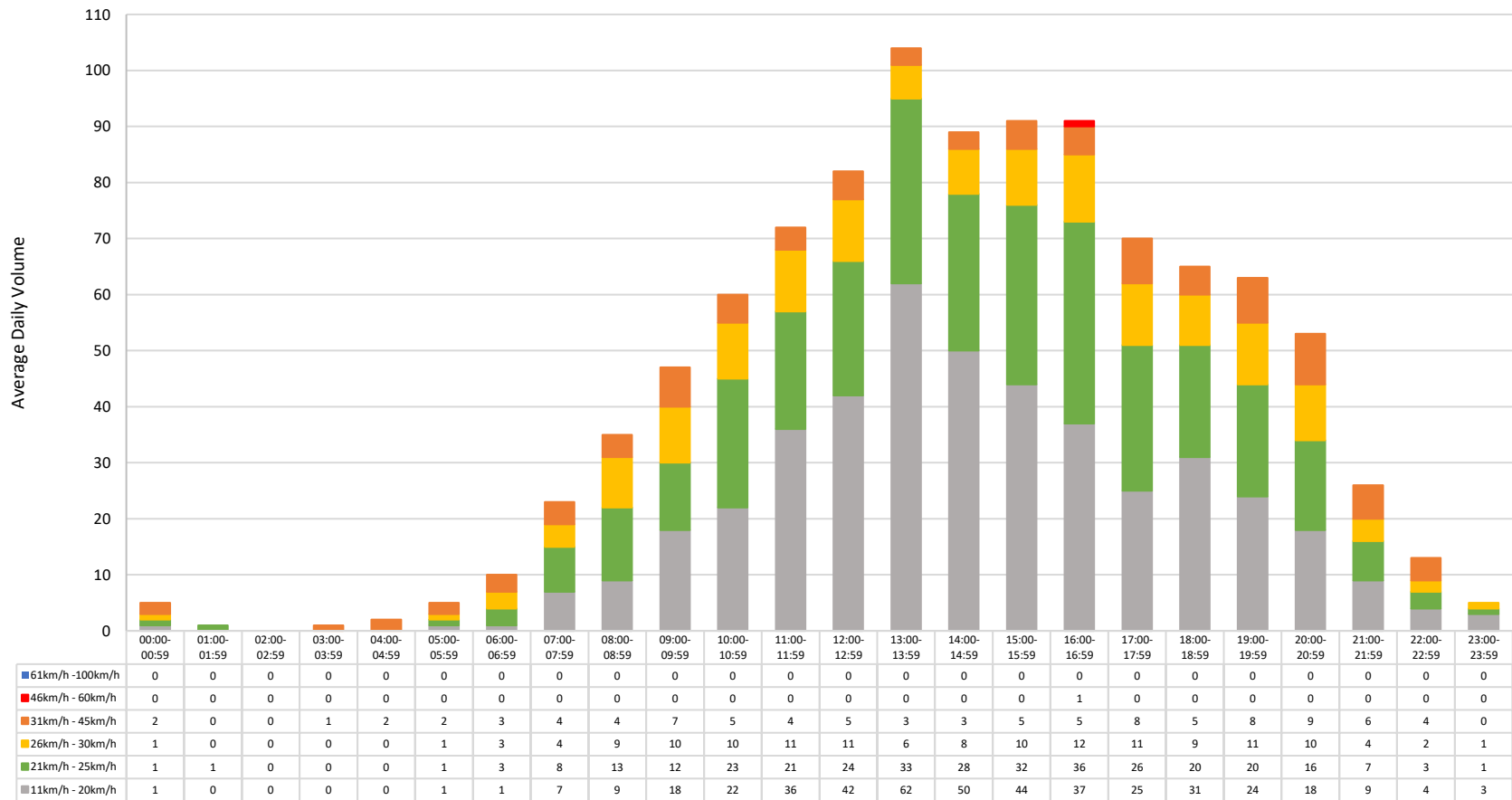


Figure 3- Speed by Hour Analysis for Eastbound Weekdays

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays. The data shows that speeding formed an “n” shape as it increased throughout the day until it reached its peak from 5:00pm to 8:59pm and begins to decline again. Additionally, there is a spike in speeding rates from 9:00am until 9:59am.

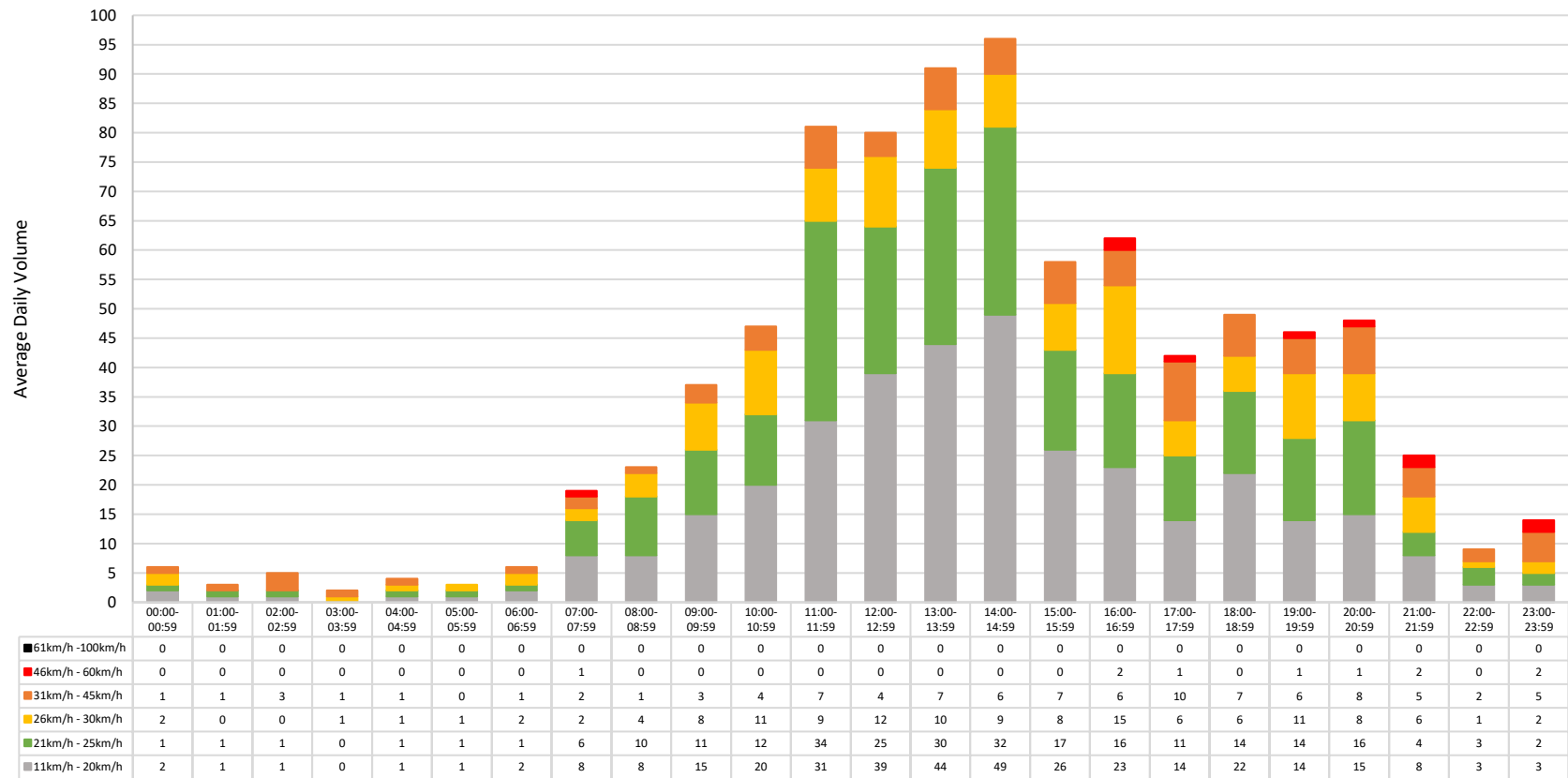


Figure 4 Speed by Hour Analysis for Eastbound Weekends

Figure 4 above is the speed by hour graph used to determine the time where most speeding occurs on the weekend. The data shows that speeding was low at night and began to increase around 7:00 am before beginning to decline again at 10:00pm. The speeding reached a peak from 4:00pm until 5:59pm. There were additional spikes in speeding from 11:00am until 11:59am.

2.2 Westbound Speed Analysis

Figure 5 to 7 below is the speed summary for the westbound traffic.

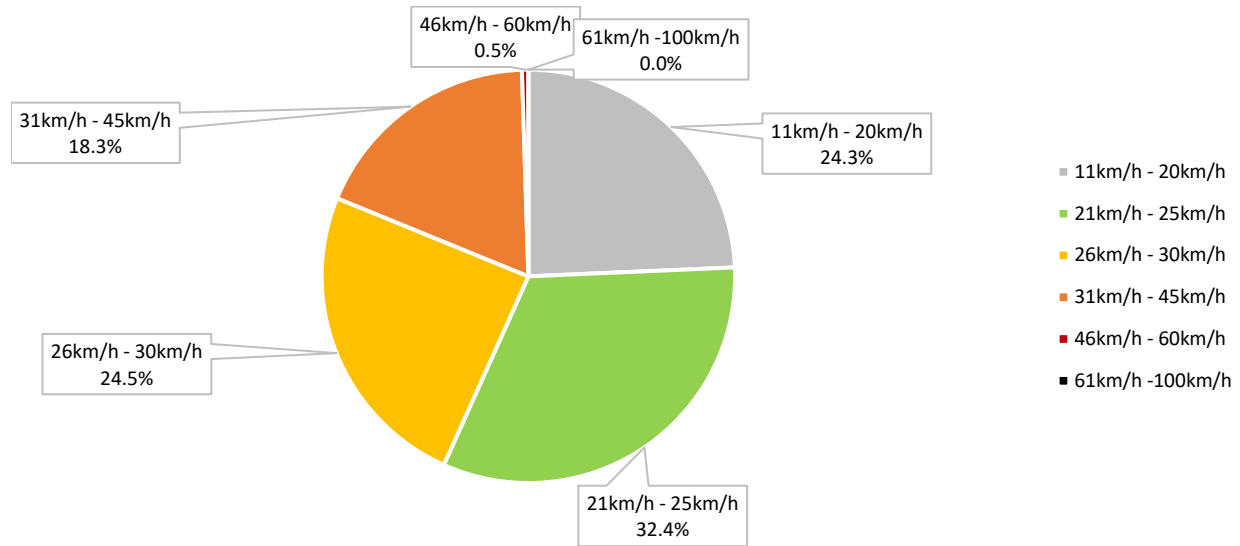


Figure 5- Little Lake Westbound

Figure 5 shows that 24.3% of the vehicles were travelling below the posted speed limit, 56.9% of vehicles were travelling between 21-30 km/h, and 18.8% of vehicles were travelling above 30km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 81.2% of vehicles were driving within the accepted speed limit.

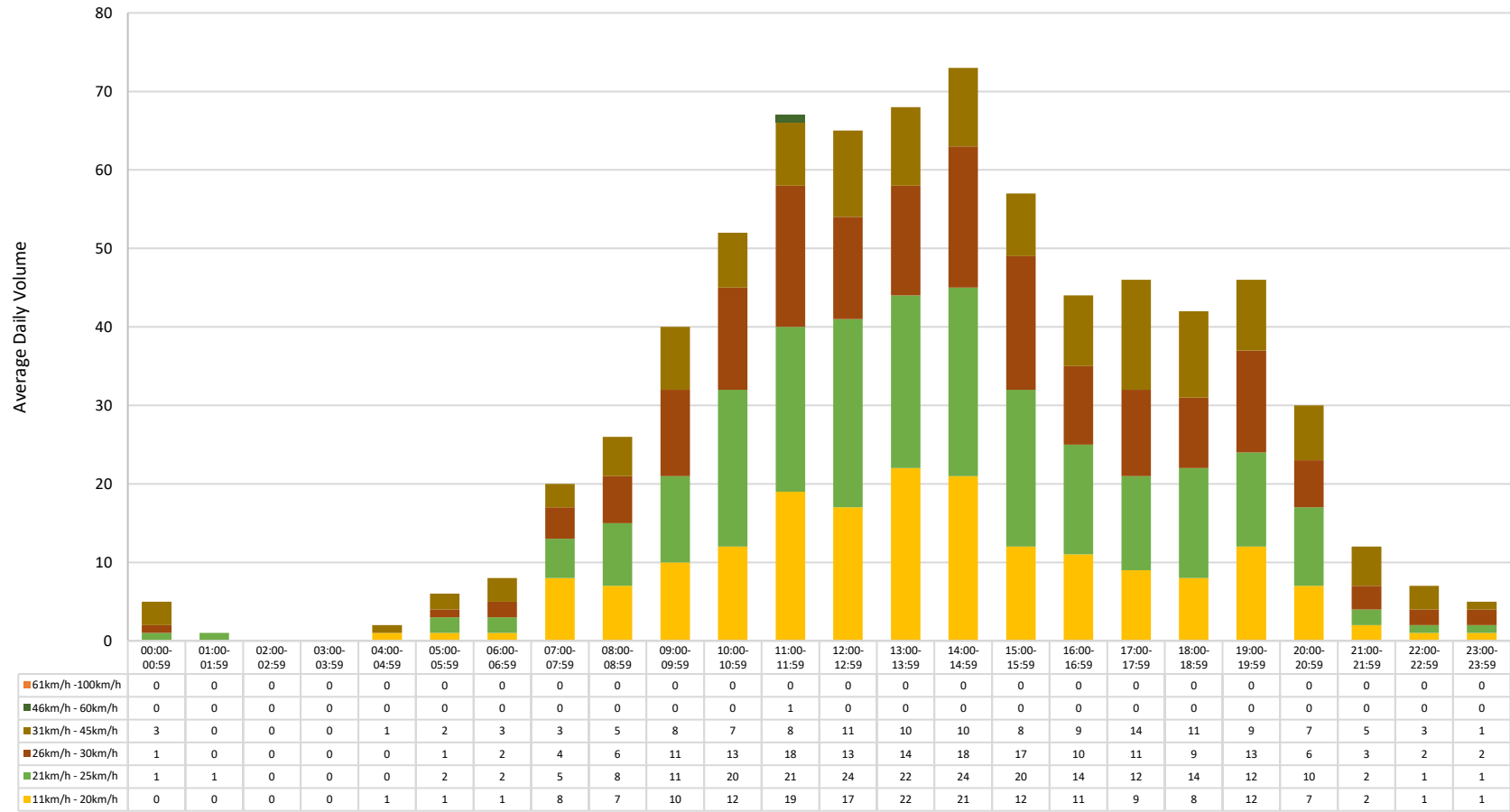


Figure 6- Speed by Hour Analysis for Westbound (August 5th to August 6th and August 9th to August 10th, 2021)

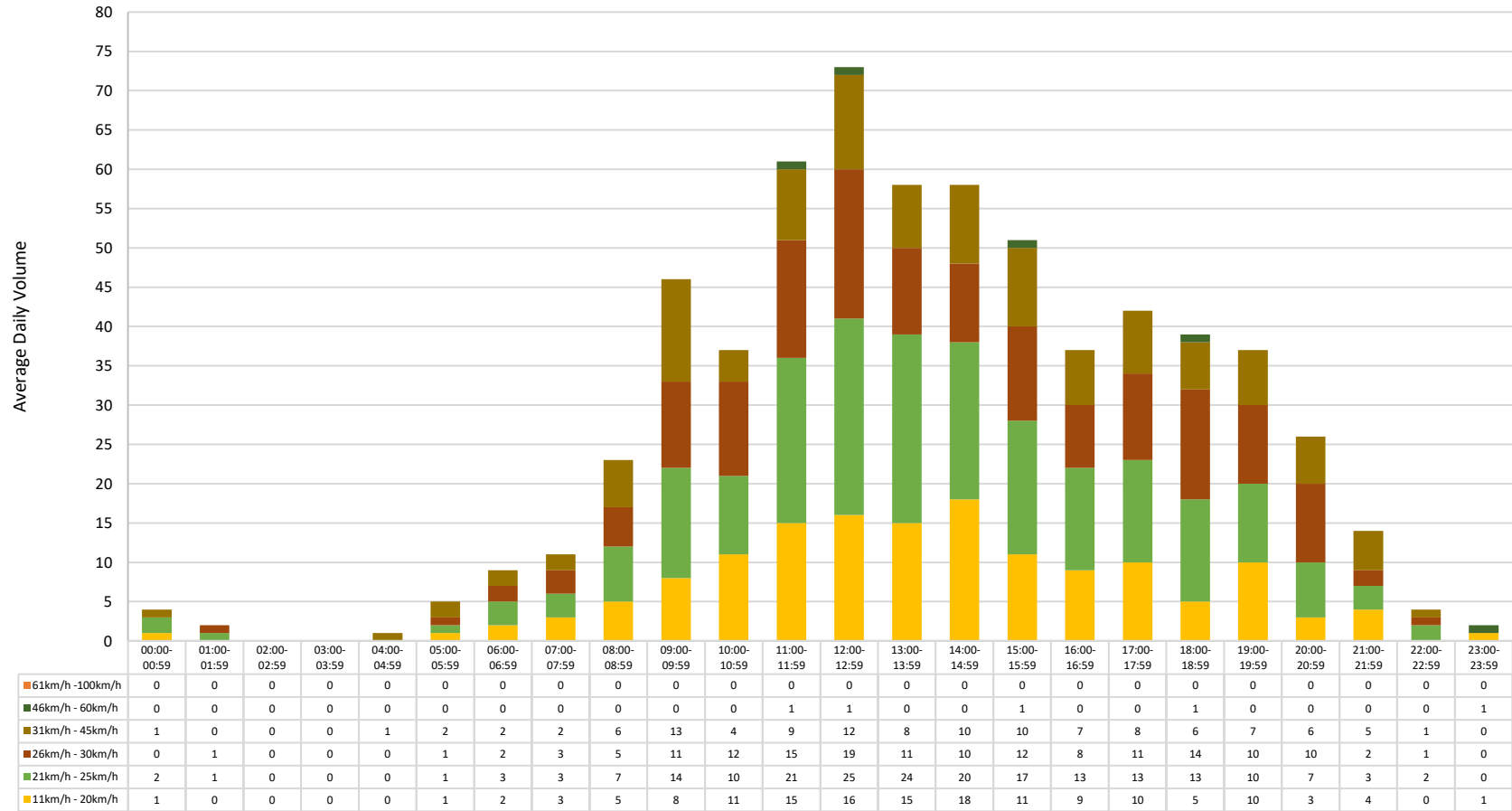


Figure 7- Speed by Hour Analysis for Westbound (August 7th to August 8th, 2021)

Figure 6 (weekday) and Figure 7 (weekend) above are the speed by hour graphs used to determine the time where most speeding occurs. It should be noted that here, instances where the speed was greater than 10km/h above the speed limit were considered with regards to speeding trends. The average amounts of significant speeding form an approximate curve. On the weekdays, speeding reached its peak from 12:00pm until 2:59pm and there was an additional spike from 5:00pm until 6:59pm. On the weekend, speeding reached a peak from 11:00 am until 12:59pm with additional spikes from 9:00am to 9:59 am and from 2:00pm until 3:59pm.

In addition, the traffic trailer detected that 71.10% of vehicles slowed down when approaching the trailer in the eastbound direction and 59.43% slowed down in westbound direction. These percentages show that the trailer is influencing traffic calming.

3.0 Traffic Volume

Table 3 shows the average daily volume on Little Lake Park for eastbound and westbound directions.

Table 3- Volume Summary

Direction	Period	Average Daily Traffic Volume
Eastbound	July 29 th to July 30 th and August 2 nd to August 3 rd (Monday, Tuesday, Thursday, Friday)	1073.2
Eastbound	July 31 st to August 1 st (Saturday, Sunday)	829.5
Westbound	August 5 th to August 6 th and August 9 th to August 10 th (Monday, Tuesday, Thursday, Friday)	721.0
Westbound	August 7 th to August 8 th (Saturday, Sunday)	623.0

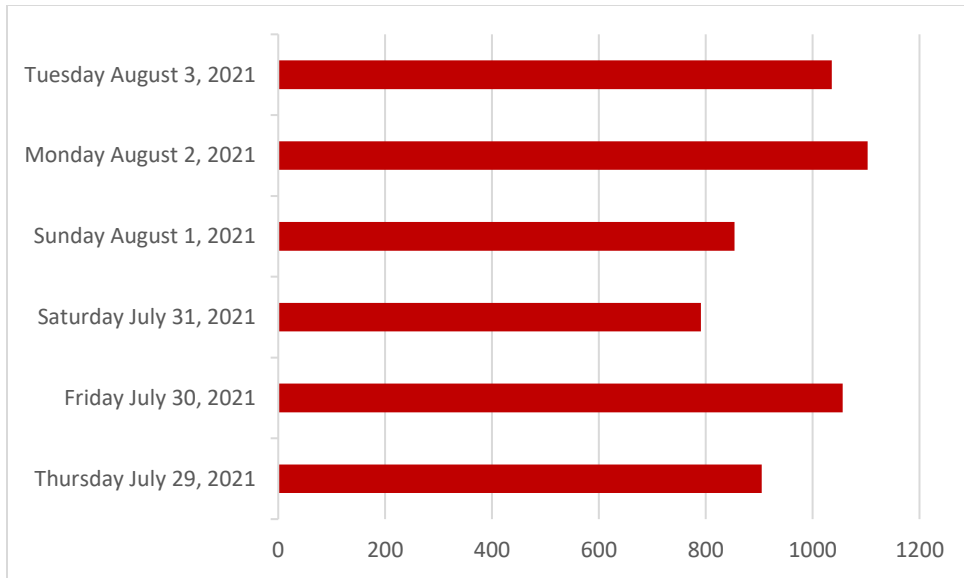


Figure 8- Total Volume per Day (Eastbound)

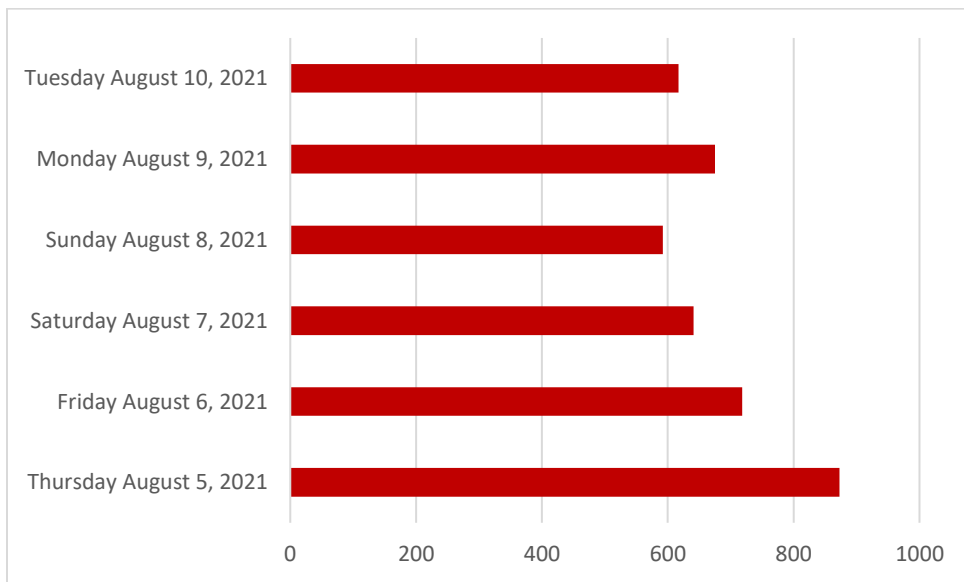


Figure 9- Total Volume per Day (Westbound)

3.1 Eastbound Volume by Hour

The data collected from July 29th to July 30th and August 2nd to August 3rd (weekdays) and July 31st to August 1st (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 10 and Figure 11, respectively.

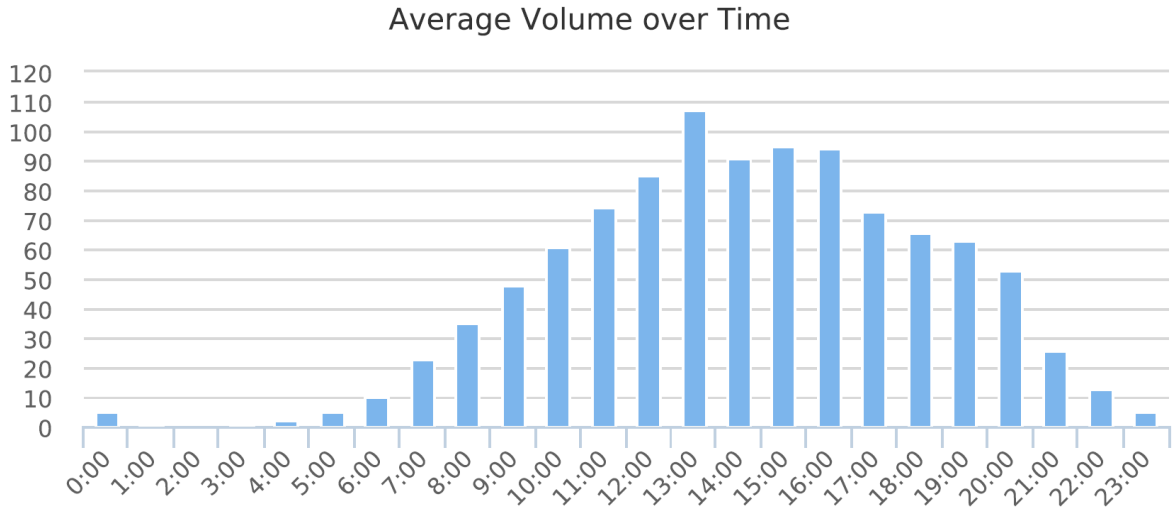


Figure 10 Average Volume per Hour from July 29th to July 30th and August 1st to August 2nd (Eastbound)

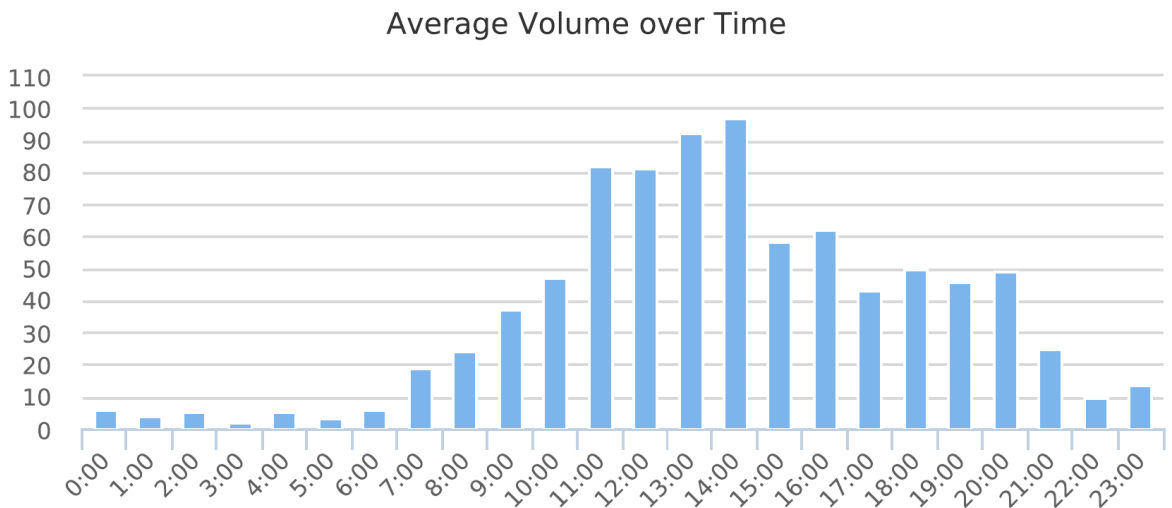


Figure 11- Average Volume by Hour from July 31st to August 1st (Eastbound)

As shown in Figure 10, on weekdays, peak traffic occurs from 1:00pm to 1:59pm in the eastbound direction. Figure 11 shows that on weekends, the peak occurs between 1:00pm and 2:59pm in the eastbound direction.

3.2 Westbound Volume by Hour

The data collected from August 5th to August 6th and August 9th to August 10th (weekdays) and from August 7th to August 8th (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 12 and Figure 13, respectively.

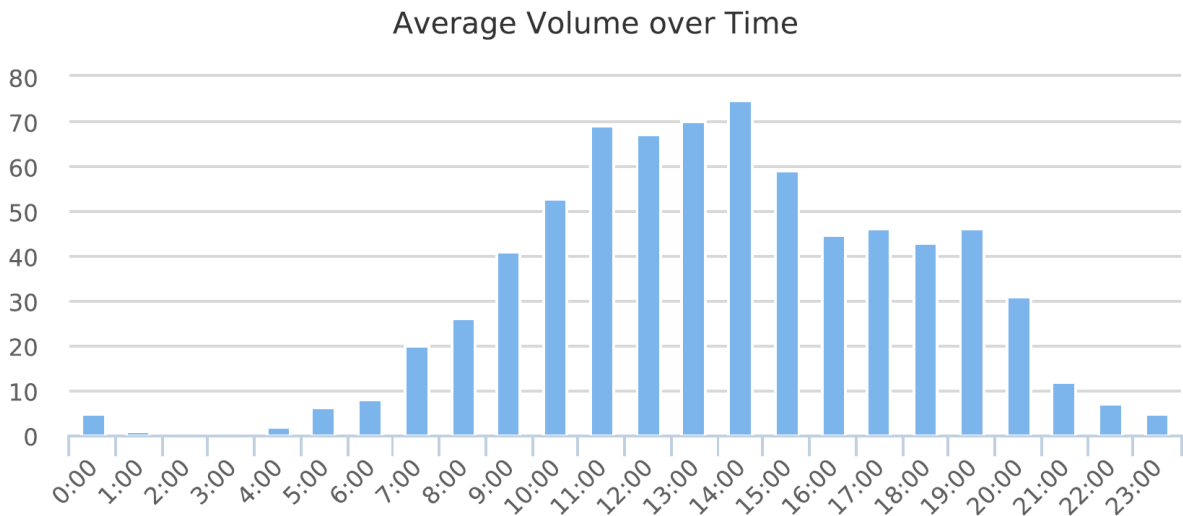


Figure 12- Average Volume by Hour from August 5th to August 6th and August 9th to August 10th, 2021 (Westbound)

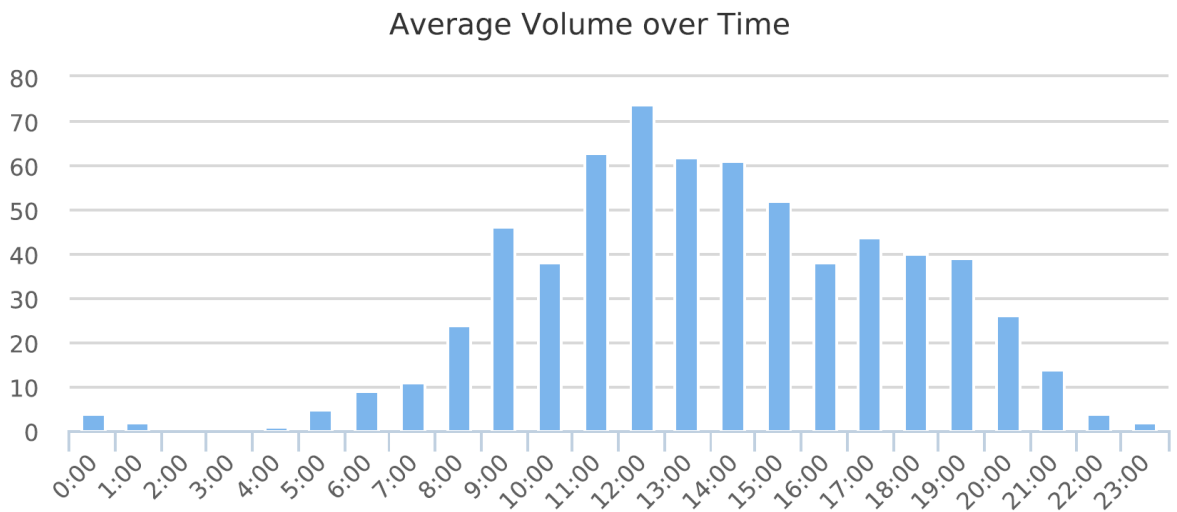


Figure 13- Average Volume by Hour from August 8th to August 9th (Westbound)

As shown in Figure 12, the volume of traffic over time forms a curve which reaches a peak from 2:00pm to 2:59pm on weekdays in the westbound direction. There are additional spikes in traffic volume from 3:00pm until 5:59pm which correspond to typical evening rush hours. Figure 13 shows weekend traffic which forms an approximate curve in which peak traffic occurs from 12:00pm until 12:59pm. There are additional spikes in traffic volume from 9:00am until 9:59am and from 5:00pm until 7:59pm which correspond to typical evening rush hours. It is worth noting that the average volumes in the westbound direction are lower than those in the eastbound direction. This is likely because the week that the traffic study was performed in the westbound direction, it rained frequently which would affect traffic because many people using this road are going to spend time at the beach.

4.0 Conclusion

The traffic study conducted on Little Lake Park for both eastbound and westbound directions was carried out from July 29th to August 10th, 2021. From the speed analysis, it was determined that 89.4% and 81.2% of vehicles were travelling within the accepted speed limit for the eastbound and westbound directions, respectively. In addition, from the volume analysis, it was determined that the peak traffic hours were in the early afternoon in the eastbound direction on weekdays and weekends. It was also determined that the peak traffic occurred around midday on both weekdays and weekends in the westbound direction.